New records of tenuipalpid mites (Acari: Tenuipalpidae) for the Georgian and Caucasus fauna

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Abstract: Three flat mite species—Brevipalpus cuneatus (Canestrini & Fanzago, 1876), Aegyptobia tragardhi Sayed, 1950, and Aegyptobia beglarovi Livschitz & Mitrofanov, 1967—were registered for the first time for the Georgian fauna, of which B. cuneatus and A. tragardhi are new records in the Caucasus. Consequently, in adding these new records, the total number of tenuipalpid mites in Georgia is increased to 31 species.

Key words: Tenuipalpidae, Brevipalpus, Aegyptobia, Georgia, Caucasus

The family Tenuipalpidae has been described in all zoogeographical regions, from all manner of vascular plants. Several species are pests, either directly damaging plants or vectoring plant viruses. Tenuipalpidae contains 1100 species belonging to 38 genera (Mesa et al., 2009; Beard et al., 2012). Brevipalpus Donnadieu, 1875 and Aegyptobia Sayed, 1950 are 2 large and widespread genera. According to Mesa et al. (2009), Brevipalpus included 282 species and Aegyptobia 93 species. Since then, several new species of these 2 genera have been described. In 2013 and 2014, 2 new species from the genus Brevipalpus have been described. One of them, Brevipalpus incognitus Ferragut & Navia, is from the Americas (Brazil, Chile, USA) (Navia et al., 2013), and the other, Brevipalpus noranae Halawa & Fawzy, is from Egypt (Halawa and Fawzy, 2014). In addition, 6 new species have been described from the genus Aegyptobia. Five of them are from Iran: A. bromi Khanjani, Khanjani & Seeman; A. nazarii Khanjani, Khanjani & Seeman (Khanjani et al., 2012); A. jiroftiensis Farzan, Asadi, Ueckermann & Shervani 2012; A. hormozgani Farzan, Asadi, Ueckermann & Shervani (Farzan et al., 2012); and A. pirii Khanjani, Zahiri & Khanjani (Khanjani et al., 2013b). The other species, A. yertle Seeman & Beard, was described from Australia (Seeman and Beard, 2011).

Until now, the Tenuipalpidae mite fauna in Georgia was represented by 5 genera and 28 species (Reck, 1959, 1976; Mitrofanov and Strunkova, 1979; Tkstitshvili, 2000; Arabuli, 2008; Arabuli and Kvavadze, 2013). Among them, 15 species have been recorded from the genus Brevipalpus and only 3 species from the genus Aegyptobia. The fauna of Tenuipalpidae is likely underestimated in Georgia, as it is in many parts of the world, because the mite fauna is poorly studied in this area. Therefore, new records and new species are likely, especially considering that 21% of the vascular plants known from Georgia are endemic for the Caucasus and Georgian flora (Gagnidze, 2005). The 3 species of flat mites reported here are new records for the Georgian fauna, and 2 are new for the Caucasus fauna. There are also 2 new host plants for the species Aegyptobia beglarovi.

Materials were taken weekly from 2011 to 2013 all over Georgia from transects aimed to survey the flat mite fauna of Georgia. Samples were collected from varied hosts in different habitats, including leaves and twigs, and were individually bagged in tightly closed plastic bags and transported the same day to the laboratory. The elevation and longitude/latitude were recorded for each locality using a handheld Garmin global positioning device. Mites were extracted using distilled water and filtered through different sieves (20 µm, 400 µm), and then preserved in Petri dishes containing 70% ethanol. Selected mites were cleaned in lactic acid for 1 week at room temperature and then washed with distilled water. Subsequently, mites were cleaned in lactic acid for 1 week at room temperature and then washed with distilled water. Subsequently, mites were mounted on microslides in Hoyer’s medium (Reck, 1959; Vacante, 2010). Specimens were examined under an MC50LE microscope with differential face contrast.
The terminology and original description used in the key follows Pritchard and Baker (1958), Reck (1959), Livschitz and Mitrofanov (1967), Mitrofanov et al. (1975), and Mitrofanov and Strunkova (1979).

Type materials were deposited in the Entomology Institute (Arthropods Laboratory) of the Agricultural University of Georgia.

Family Tenuipalpidae Berlese
Genus Brevipalpus Donnadieu, 1875

Brevipalpus cuneatus (Canestrini & Fanzago, 1876)
Caligonus cuneatus - original designation (Mesa et al., 2009),
Tenuipalpus cuneatus Berlese, 1887 (Mesa et al., 2009),
Brevipalpus cuneatus Baker, 1949 (Mesa et al., 2009),
Hystirpalpus cuneatus Mitrofanov & Strunkova, 1979 (Mesa et al., 2009).

Examined material: 2 adult females ex. Hedera colchica (Araliaceae) (C.L.Koch) (Slide No.: 834; Date: 03.12.2012); Georgia: source of the river Chishura (42°15′N, 42°49′E; elevation 139 m), Terjola district, West Georgia, coll. T. Arabuli, E. Kvavadze.

Geographical distribution: Ukraine (Livschitz and Mitrofanov, 1967; Mitrofanov and Strunkova, 1979); Italy (Canestrini and Fanzago, 1876); Greece, Italy (http://www.faunaeur.org).


Genus Aegyptobia Sayed, 1950
Aegyptobia tragardhi Sayed, 1950
Pentamerismus tragardhi Baker & Pritchard, 1953 (Mesa et al., 2009),
Aegyptobia (Aegyptobia) tragardhi Mitrofanov et al., 1975 (Mesa et al., 2009),
Aegyptobia ueckermanni Khosrowshahi & Arbabi, 1997 (Khanjani et al., 2012).

Examined material: 5 adult females and 1 nymph ex. Thuja orientalis L. (Slide Nos.: 647, 648; Date: 22.06.2012); Georgia: Dendropark of Agricultural University (41°48′N, 44°49′E; elevation 615 m), coll. T. Arabuli.

Geographical distribution: Uzbekistan, Tajikistan, Egypt (Mitrofanov and Strunkova, 1979); Egypt (Sayed, 1950); Iran (Farzan et al., 2012).

Remarks: New record for Georgian and Caucasus fauna. The specimens were found on the same host species as the holotype.

Aegyptobia beglarovi Livschitz & Mitrofanov, 1967
Aegyptobia (Aegyptobia) beglarovi Mitrofanov et al., 1975 (Mesa et al., 2009),
Aegyptobia kharazii Mesa & Moraes, 2007 (Khanjani et al., 2013a),
Aegyptobia meyerae Khosrowshahi & Arbabi, 1997 (Khanjani et al., 2013a).

Examined material: 16 adult females and 3 nymphs ex. Juniperus oxycedrus L. (Slide Nos.: 553, 633, 661; Date: 01.07.2011, 19.06.2012, 02.07.2012); Georgia: plateau of Nutsubidze (41°43′N, 44°43′E; elevation 626 m), coll. T. Arabuli, E. Kvavadze.

Three adult females ex. from new host plant Artemisia phylostachys (Boiss) (Slide No.: 652; Date: 26.06.2012); Georgia: plateau of Nutsubidze (41°43′N, 44°43′E; elevation 692 m), coll. T. Arabuli, E. Kvavadze. Seven adult females and 4 nymphs ex. Juniperus communis L. (Slide Nos.: 614, 673, 676; Date: 16.05.2012, 17.07.2012, 24.07.2012); Georgia: Dendropark of Agricultural University of Georgia (41°48′N; 044°46′E; elevation 615 m), coll. T. Arabuli. Three adult females and 1 nymph ex. from new host plant Cupressus sempervirens L. (Slide No.: 649; Date: 22.06.2012); Georgia: III massive of Varketily (41°41′N, 044°52′E; elevation 459 m), coll. T. Arabuli.

Geographical distribution: Ukraine, Azerbaijan (Mitrofanov and Strunkova, 1979); Ukraine (Livschitz and Mitrofanov, 1967); Turkey (Uysal et al., 2001; Bayram and Cobanoğlu, 2007); Iran (Khanjani et al., 2008, 2013b).

Remarks: New record for Georgian fauna. The host plants Artemisia phylostachys and Cupressus sempervirens are new.

References


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